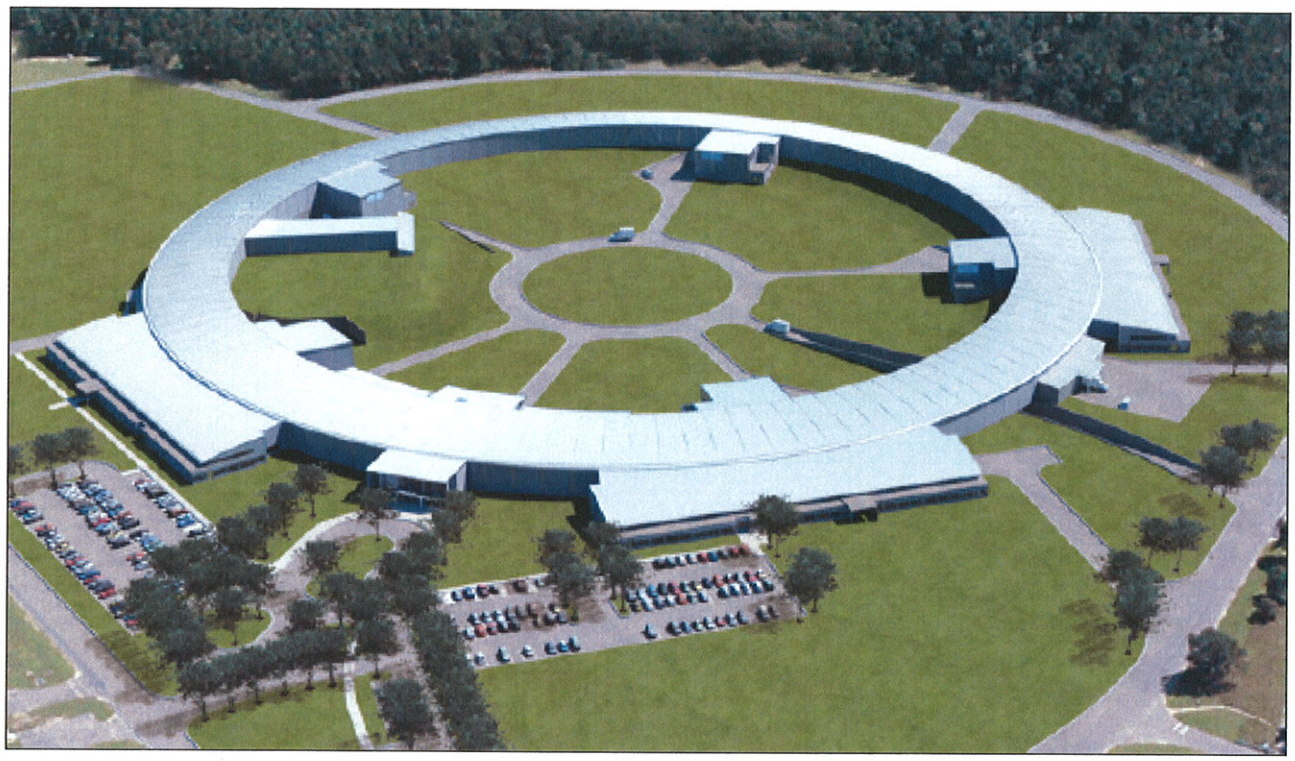
Beneficial Occupancy Readiness Evaluation Plan for the NSLS-II Conventional Facilities



BNL National Synchrotron Light Source II

Basic Energy Sciences

BROOKHAVEN NATIONAL LABORATORY BROOKHAVEN SCIENCE ASSOCIATES

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Beneficial Occupancy Readiness Evaluation Plan for the National Synchrotron Light Source II

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VERSION CONTROL SHEET

VERSION	DESCRIPTION	DATE	AUTHOR	APPROVED BY
1	First Issue	01July2010	Sitnikov	See cover page.
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1.0 PURPOSE

Beneficial Occupancy Readiness Evaluation (BORE) is the phase of the project cycle when BNL accepts all or a portion of the facility from the contractor as construction substantially complete to begin beneficial use of that portion of the facility. The purpose of the BORE is to assure that all necessary building safety systems are in place and functional prior to incremental start-up (ORE process) of the scientific facilities and equipment. There will be up to twelve distinct BOREs to facilitate a phased startup of the facility, according to the construction phasing plan.

2.0 SCOPE

NSLS-II will follow the requirements of the Readiness Evaluations subject area in the BNL Subject Based Management System (SBMS).

To achieve beneficial occupancy for NSLS-II, all essential prime contractor deliverables as outlined below must be substantially completed for each phase, except for minor punch list items and final contract closeout. This will assure that a robust evaluation process can be performed.

As each of the NSLS-II project phases nears completion, the BORE Committee will perform the formal BORE walk-throughs. Deficiencies (findings) will be identified and documented in the BORE Report. The appropriate BORE Committee Subject Matter Expert will determine if a finding is pre-occupancy or post-occupancy. All pre-occupancy findings will be resolved prior to the Committee granting beneficial occupancy. Post-occupancy findings will be tracked in the NSLS-II Family Assessment Tracking System (ATS) until completion. Informal walk-throughs at the discretion of the BORE Committee preceding the formal walk-throughs will be conducted as needed to facilitate the process.

The prime contractor deliverables will be verified during the commissioning process and closeout process by the NSLS-II Project, Facilities & Operations and/or the Commissioning Contractor. The role of the BORE Committee is not to repeat this commissioning process but rather to confirm that the process has been adequately completed.

Deliverables

The following deliverables must be substantially completed for each phase of the BORE evaluation (except for minor items identified in the punch list):

1. The building structures are substantially complete including all walls, floors, ceilings, roofs, windows, and structural members.

2. Life safety systems including the fire sprinkler system, detection systems, exit lights, emergency lights, and building alarms, have been accepted and placed in service.

3. All building egress systems (exit doors, and stairs) have been accepted, are in service and egress paths are not obstructed or compromised by on-going construction activity.

4. All facility communication systems necessary for life safety are completed accepted, and placed in service.

5. All conventional building services and utilities are accepted and placed in service, including electric power, general area lighting, water, sewer, HVAC, compressed air, chilled water, steam & condensate. **Note:** Testing of HVAC cooling capacity may have deferred functional testing, to assure optimum ambient conditions.

6. All surface treatments such as paint, carpet, floor tile, ceiling tile, etc. have been substantially completed in the common and support areas of building and those labs identified for initial occupancy.

7. BNL F&O/Fire Department and Security staff has received necessary training for the building life safety systems determined to be necessary for beneficial occupancy in accordance with the BVH Commissioning Plan.

8. All approved Operation and Maintenance Manuals, all approved as-built drawings, all training and miscellaneous close-out deliverables.

The NSLS-II project will coordinate delivery schedules for technical equipment with the prime contractor's construction schedule to minimize double handling and storage of technical equipment. This will require a phased Beneficial Occupancy, whereby individual facilities or sections of facilities are accepted prior to acceptance of the entire building, to facilitate equipment staging. The NSLS-II Project Team, in concert with the Laboratory BORE Review Team, will review the criteria applicable to each phased acceptance of a space for Beneficial Occupancy and determine the applicable requirements. In all cases this acceptance will include the appropriate life safety requirements and the environmental and security requirements necessary to assure the equipment is maintained in a clean, dry, secure area with restricted access control.

3.0 RESPONSIBILITIES

3.1 NSLS-II BORE Project Leader

The NSLS-II BORE Project Leader has the responsibility to coordinate all BORE activities on behalf of the NSLS-II Project with the Laboratory Readiness Review Coordinator. This includes the development and updates necessary to the BORE Plan, assembly and delivery of all identified BORE deliverable documentation to the Laboratory BORE team, scheduling of site visits for the Laboratory BORE team, follow-up and tracking on pre- and post-occupancy items, and completion of necessary BORE completion documentation.

3.2 SHSD Review Coordinator

The Safety and Health Services Review Coordinator Chairs the BORE Committee and has the responsibility to coordinate with the NSLS-II BORE Project Leader to assure all requirements of the Readiness Evaluation Subject Area are met for the NSLS-II.

3.3 NSLS-II Project Team

As each phase of the NSLS-II nears completion the NSLS-II Project Team will perform regular walk-throughs of the building to review completion status and develop punch lists. The Project Team will periodically attend commissioning activities and witness testing at their discretion. They will also verify document submittal status and training status for operating staff. All outstanding requirements needed to achieve Beneficial Occupancy will be documented on a punch list and be reviewed at regular Integrated Project Team meetings until they are completed.

3.4 Laboratory BORE Committee

The Laboratory BORE Committee is responsible to conduct the NSLS-II BORE per the Readiness Evaluations subject area Section 1, "Beneficial Occupancy Readiness Evaluation."

The BORE Committee will be invited to NSLS-II Project regular facility walk-throughs approximately 2 to 3 months prior to the scheduled ORE. The NSLS-II BORE Project Leader, in consulation with the laboratory ESH Readiness Coordinator, will determine the frequency and scope of these pre-ORE walk-throughs.

The appropriate BORE Committee SME will determine the category of the BORE finding. For example, the BNL Fire Protection Engineer (as the Authority Having Jurisdiction) will categorize any BORE life safety findings as Pre or Post Occupancy.

3.5 Commissioning Contractor

The Commissioning Contractor BVH Integrated Services is responsible to implement the BNL-approved commissioning plan by verifying that all equipment identified in the plan is functional, meets contract specifications, and that documentation of such is provided to BNL.

3.6 Brookhaven Site Office

A representative from the Brookhaven Site Office will be invited to participate in all aspects of the NSLS-II BORE including pre-BORE facility walk-throughs.

4.0 BORE DOCUMENTATION DELIVERABLES

The following deliverables will be made available to the NSLS-II BORE Team no later than the initial BORE Committee walk down as per the BORE project schedule:

- Commissioning Safety Assessment Document (applicable to phase of BORE)
- Fire Hazard Analysis
- Training and Qualification Requirements/Records

- Interim operating procedures, as needed
- Building Emergency Plan
- Fire Department Run Card
- Completed Fire Department Orientation (all shifts)
- Completed Security Orientation (all shifts)
- Commissioning Plan (BVH)
- Commissioning documents/checklists for safety systems
- BORE Appointment Memo

5.0 TRAINING AND QUALIFICATION REQUIREMENTS

5.1 NSLS-II Support Staff

The NSLS-II ESSH Training Coordinator will identify critical training requirements required for facility startup for NSLS-II staff and matrixed staff. Staff will be required to have completed specified training prior to BORE approval.

5.2 Facilities and Operations Support Staff

Relevant Facilities and Operations Support Staff will be covered by a work permit as per the Laboratory Work Planning and Control Subject Area. This work permit will identify necessary training for the areas of the facility where the work will be performed.

5.3 Vendors/Equipment Installers

Installation of equipment will be covered by work permits as per the Work Planning and Control Subject Area. Work Permits will document work planning and identify necessary training for contractor (vendor) representatives, NSLS-II and matrixed staff and Facilities and Operations Staff.

6.0 BORE PROJECT SCHEDULE

PHASE	DESCRIPTION	BORE DATE*
PHASE 1	Ring Building Pentant 1	2/11/11
PHASE 2	Vehicle Tunnel Utility Tunnel Cooling Tower	2/18/11
PHASE 3	RF Building	3/23/11
PHASE 4	Injection Building	5/18/11
PHASE 5	Ring Building Pentant 2	6/2/11
PHASE 6	Ring Building Pentant 3	9/27/11
PHASE 7	Ring Building Pentant 4	11/28/11
PHASE 8	Ring Building Pentant 5	2/9/12
PHASE 9	LOB 2 Shell & related site work (Base Bid)	4/30/12*
PHASE 10	LOB 1 Fully Fitted Out & related site work (Base Bid)	5/15/12*
PHASE 11	LOB 3 Fully Fitted Out and related site work (Base Bid)	5/30/12*
PHASE 12	LOB 4 Shell and Related Site work (Option 1)	6/15/12*
PHASE 13	Full Interior Fit-out of LOB 2 (Option 4)	6/30/12*
PHASE 14	LOB 5 Shell and Related Site work (Option 2)	8/15/12*
PHASE 15	Full Interior Fit-out of LOB 4 (Option 3)	8/30/12*
PHASE 16	Full Interior Fit-out of LOB 5 (Option 5)	9/30/12*

*Dates may be adjusted depending on the LOB contractor schedule and on the options funded.

7.0 BORE COMPLETION DOCUMENTATION

The completed documentation package for the NSLS-II shall consist of the following;

- BORE Report for each phase
- Readiness Evaluation Approval Documentation for each phase
- Documentation related to the closure of pre-occupancy items
- Final BORE Report for entire Facility

A copy of the Readiness Evaluation Approval Document will be transmitted by the NSLS-II BORE Project Leader to the BNL Deputy Director for Operations and the SHSD Readiness Review Coordinator.